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## CLAIMS:

1. A method of treating gastrointestinal diseases associated with species of genus *Clostridium* in human, comprising:

5 determining that a patient has an etiological component such as a microbial agent producing a toxin;

administering to said patient suffering therefrom an antimicrobial composition effective against species of genus *Clostridium* in an amount effective for treating said diseases;

10 wherein the antimicrobial composition is a probiotic agent comprising at least one of the bacterial species is a normal, benign inhabitant of a human gut.

2. The method of Claim 1, wherein said species of genus *Clostridium* is *Clostridium difficile* or *Clostridium tetani* strains.

15 3. The method of Claims 1 and 2; wherein said gastrointestinal diseases associated with *Clostridium* species are diarrhea and inflammatory bowel diseases taken from the group consisting of ulcerative colitis, Crohn's disease, Parkinson's disease, Whipple's disease and d-lactic acidosis.

20 4. The method of Claims 1 to 3, wherein said probiotic agent is selected from the group consisting of *Bacteroides thetaiotaomicron*, *Bacteroides vulgatus*, *Bacteroides distasonis*, *Bacteroides fragilis*, *Bifidobacterium adolescentis* group, *Eubacterium aerofaciens*, *Clostridium ramosum*, *Escherichia coli*, and *Streptococcus faecalis* group, and mixtures thereof.

5. The method of Claims 1 to 4, wherein the antimicrobial composition is in the form of a tablet or capsule which is enteric coated.

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6. A method of treating a patient having a gastrointestinal diseases associated with species of genus *Clostridium*, comprising:

5 determining that a patient has an etiological component such as microbial agent producing a toxin;

administering to said patient an antimicrobial agent for temporary eliminating or suppressing of said patient flora; and thereafter administering to said patient a probiotic agent.

10 7. The method of Claim 6, wherein said species of *Clostridium* is *Clostridium difficile* or *Clostridium tetani* strains

8. The method of Claims 6 and 7, wherein said gastrointestinal diseases associated with *Clostridium* are diarrhea and inflammatory bowel diseases such as ulcerative colitis, and Crohn's disease.

15 9. The method of Claims 6 to 8, wherein said probiotic mixture is selected from a group of species consisting of *Bacteroides thetaiotaomicron*, *Bacteroides vulgatus*, *Bacteroides distasonis*, *Bacteroides fragilis*, *Bifidobacterium adolescentis* group, *Eubacterium aerofaciens*, *Clostridium ramosum*, *Escherichia coli*, and *Streptococcus faecalis* group, and mixtures thereof.

20 10. The method of Claims 6 to 9, wherein the antimicrobial agent is a bacteriophage which is specific for a bacterium producing the disease.

11. The method of Claim 10, wherein the bacteriophage is administered in a form of an enterically coated tablet or capsule.

25 12. The method of Claims 6 to 11, wherein said antimicrobial agent is an antibiotic selected from a group consisting of ABT-773, Ampicillin/sulbactam,

Amphomycin, Azithromycin, Bacitracin, Carbomycin, Cephalosporins, oral, Clarithromycin, Erythromycins, Furazolidone, Fusidic acid, Na fusidate, Gramicidin, Imipenem, oral, Josamycin, Linezolid, Macrolides, Metronidazole, Mikamycin, Novobiocin, Oleandomycin, triacetyloleandomycin, Ostreogrycin, Piperacillin/tazobactam, Pristinamycin, Ramoplanin, Ristocetin, Rosamiein, rosaramicin, Spectinomycin, Spiramycin, Staphylomycin, Streptogramin, Synergistin, Teicoplanin, Telithromycin, Ticarcillin/clavulanic acid, Trocidin, Tyrothricin, Vancomycin, Vernamycin, Virginiamycin, Amoxicillin/clavulnate and combinations thereof.

13. The method of Claims 1 to 12, wherein said probiotic agent consists of one or more of the following normal inhabitants of the human intestinal tract: any species of Bacteroides, Prevotella, Porphyromonas, Fusobacterium, Sutterella, Bilophila, Campylobacter, Wolinella, Butyrovibrio, Megamonas, Desulfomonas, Desulfovibrio, Bifidobacterium, Lactobacillus, Eubacterium, Actinomyces, Eggerthella, Coriobacterium, Propionibacterium, Bacillus, Peptostreptococcus (and newly created genera originally in Peptostreptococcus), Peptococcus, Acidaminococcus, Ruminococcus, Megasphaera, Gaffkya, Coprococcus, Veillonella, Sarcina, certain of the species of Clostridium, any of the species of the following genera: Aerococcus, Streptococcus, Enterococcus, Pediococcus, Micrococcus, Staphylococcus, Corynebacterium, and species of the genera comprising the Enterobacteriaceae and Pseudomonadaceae and mixtures thereof.

14. The method of claims 1 to 7, wherein the antimicrobial agent is radionuclide.